



HAL
open science

Contrasting dynamics of water use efficiency under drought on four poplar genotypes: leaf level causes and whole plant consequences

Maxime Durand, Oliver Brendel, Cyril Buré, Didier Le Thiec

► To cite this version:

Maxime Durand, Oliver Brendel, Cyril Buré, Didier Le Thiec. Contrasting dynamics of water use efficiency under drought on four poplar genotypes: leaf level causes and whole plant consequences. Seventh International Poplar Symposium IPS VII Schedule Genetics, Breeding and Conservation of Genetics Resources 11:30 Participatory genetic rescue of severely menaced populations of *Salix humboldtiana* Willd. in Patagonia. 11:45 Architectural development and phenotypic plasticity in *Salix humboldtiana* Willd. from Patagonia, Oct 2018, Buenos Aires, Argentina. hal-02949289

HAL Id: hal-02949289

<https://hal.inrae.fr/hal-02949289>

Submitted on 25 Sep 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

IPS VII Schedule

Sunday 28th

Registration: 17:00 – 19:00

Reception: 19:00 – 21:00

Monday 29th

Delta field trip.

Tuesday 30th

8:00 Registration

Authorities 9:00 Opening ceremony

9:30 IUFRO strategy

El-Kassaby Yousry A 9:45 Genomic selection: the tug-of-war between linkage disequilibrium and pedigree.

10:15 Coffee break 

Genetics, Breeding and Conservation of Genetics Resources

Rajora Om P., Aravanopoulos Phil A., Pandey Madhav, Ganopoulos Giannis. 11:00 Genetic relationships among North American willow (*Salix*) species


Gallo Leonardo, Amico Ivana, Martínez Abel and Hansen Marina. 11:30 Participatory genetic rescue of severely menaced populations of *Salix humboldtiana* Willd. in Patagonia.


Salgado Mariana, Puntieri Javier Guido and Gallo Leonardo Ariel. 11:45 Architectural development and phenotypic plasticity in *Salix humboldtiana* Willd. from Patagonia.

Ohlsson Jonas A., Hallingbäck Henrik R., Shollenberger Todd, Jebrane Mohamed, Decker Stephen R., Sandgren Mats and Rönnerberg-Wästljung Ann-Christin. 12:00 Biomass recalcitrance in *Salix viminalis* (L.): influence of genetics, chemical composition and wood density.

Cerrillo Teresa, Grande Jorgelina, Lúquez Virginia, Monteoliva Silvia, Fernández Patricia, Thomas Esteban, Fosco Ignacio, Villaverde Raúl, García Araceli and Loyal Sabrina. 12:15 Three decades of breeding research on willow trees in Argentina.

Viherä-Aarnio Anneli, Rytönen Peetu, Hyväluoma Jari, Rasa Kimmo, Suhonen Heikki, Beuker Egbert and Jyske Tuula. 12:30 From past energy willows to new biomass studies and novel products – a Finnish pilot study.

12:45 Lunch time 

Nervo Giuseppe, Vietto Lorenzo, Giorgia Carletti and Luigi Cattivelli.	14:00	Selection and characterization of willow germplasm maintained in Italy at CREA Research Centre for Forestry and Wood.
Thomas Barb R., Yue (Bobby) Hu, Pierre Périnet and Richard Pharis.	14:15	Mechanisms underlying hybrid vigour in <i>Populus balsamifera</i> L.
Yáñez Marco, Zamudio Francisco and Espinosa Cristian.	14:30	Variability in growth and wood properties of hybrid poplars established in central Chile.
Beuker Egbert, Hytönen Jyrki and Viherä-Aarnio Anneli.	14:45	Clonal variation in growth and biomass properties of hybrid aspen (<i>Populus tremula</i> × <i>P. tremuloides</i>) – opportunities for versatile end-uses.
Nervo Giuseppe, Vietto Lorenzo, Facciotto Gianni, Giorcelli Achille, Allegro Gianni, Castro Gaetano, Chiarabaglio Pier Mario, Coaloa Domenico and Bisoffi Stefano.	15:00	Selection of <i>P. canadensis</i> clones for productivity and adaptability to climate change.
	15:30	Coffee break 

Poster sessions

Molecular Biology

Chen Beibei and Zhang Deqiang.	16:30	Genetic variants in microRNA biogenesis genes as novel indicators for growth and wood properties in <i>Populus</i> .
Tschaplinski Timothy, Engle Nancy, Gunter Lee, Sykes Robert, Jawdy Sara, Xiaohan Yang, Muchero Wellington, Rottmann William, Hinchee Maud and Tuskan Gerald.	17:00	Metabolomics of <i>Populus deltoides</i> plants with modified gene activity prior to and within the lignin pathway reveals alterations in carbon flux to secondary metabolism.
Yuepeng Song, Anran Xuan, Chenhao Bu, Dong Ci, Min Tian and Deqiang Zhang.	17:15	Osmotic stress-responsive promoter upstream transcripts (PROMPTs) act as carriers of MYB transcription factors to induce the expression of target genes in <i>Populus simonii</i> .

Wednesday 31st

Molecular Biology

Chateigner Aurélien, Brunaud Véronique, Paysant-Leroux Christine, Taconnat Ludivine, Marie-Laure Michel, Magniette Martin, Sanchez-Rodriguez Leopoldo and Segura Vincent.	8:30	Prediction of complex traits in a <i>Populus nigra</i> collection with RNA sequencing supports the Omnigenic theory.
Qingzhang Du and Deqiang Zhang.	8:45	Time-specific and pleiotropic quantitative trait loci (QTL) coordinately determine stem growth dynamics in <i>Populus</i> .
Hallingbäck Henrik R., Berlin Sofia, Nordh Nils-Erik, Weih Martin and Rönnerberg-Wästljung Ann-Christin.	9:00	Genome wide associations of growth, phenology and plasticity traits in willow (<i>Salix viminalis</i> (L.)).

Samils Berit, Rönnerberg-Wästljung Ann-Christin, Hallingbäck Henrik R. and Stenlid Jan.	9:15	Genome-wide association mapping of resistance to <i>Melampsora larici-epitea</i> in <i>Salix viminalis</i> (L.).
Zamudio Francisco, Yañez Marco, Guerra Fernando, Fuentes Derie and González Álvaro.	9:30	Comparing the use of genomic clustering based on genome-wide markers (SNPs) and pedigree classification for studying the genetic variation and predicting the genetic gain in selected poplar hybrids.
Fladung Matthias, Heier Khira, Teichmann Thomas and Brüggmann Tobias.	9:45	Application of CRISPR/Cas9 approach in poplar: prospects, challenges and limitations.

Poster sessions

10:45 Coffee break



Physiology

Major John E., Mosseler Alex, Malcolm John and Hertz Shane.	11:15	Salinity tolerance of three willow species: survival, biomass yield, leaf gas exchange, sodium and nutrient parameters at three levels of salinity.
Doffo Guillermo, Achinelli Fabio and Luquez Virginia.	11:30	Nutrient exportation with the harvested biomass in a short rotation coppice plantation with willows (<i>Salix spp.</i>).
Nan Di, Tengfei Dai, Ye Wang, Brent Clothier, Yang Liu, Liming Jia, Benye Xi, Haixiang Shi	11:45	Modeling soil evaporation and the response of the crop coefficient to leaf area index in mature <i>Populus tomentosa</i> plantations growing under different soil water availabilities.
Durand Maxime, Brendel Oliver, Buré Cyril and Le Thiec Didier.	12:00	Contrasting dynamics of water use efficiency under drought on four poplar genotypes: leaf level causes and whole plant consequences.
Rodríguez María E., Mozo Irina, Cortizo Silvia, Monteverde Silvana, Cappa Eduardo and Luquez Virginia.	12:15	Contrasting responses to flooding in two F ₁ progenies of <i>Populus deltoides</i> W. Bartram ex. Marshall.
Álvarez Javier A., Faustino Laura, Graciano Corina, Fernández Tschieder Ezequiel and Gyenge Javier.	12:30	Hydrological and salts dynamics effects on growth of <i>Populus deltoides</i> at the Lower Delta of the Paraná River.
Cañete-Salinas Paulo, Zamudio Francisco, Yañez Marco, Gyenge Javier and Acevedo-Opazo César.	12:45	Yield and Plant physiological response in two commercial hybrids of <i>Populus deltoides</i> and <i>Populus nigra</i> (I-214 and I-488) under different irrigation strategies in Mediterranean climate conditions.


13:00 Lunch time



Plant Pathology

Davila C, Braccini CL, Barrozo RB, Cerrillo T, Gershenzon J, Reichelt M, Zavala JA, Fernandez PC.	14:30	Phenolic glycosides content underlie variation in susceptibility of <i>Salix spp</i> to oviposition of the willow sawfly <i>Nematus oligospilus</i>
Rashmi and K.P.Singh	14:45	Green chemical intervention for management of Poplar defoliator: <i>Clostera cupreata</i> .
Sanfuentes Eugenio, Balocchi Felipe, Moraga-Suazo Priscila, Venegas Jaime and Retamal Luis	15:00	<i>Sphaerulina musiva</i> causing stem cankers in poplar plantations in Chile.

Environmental applications

Zalesny Jr. Ronald S.	15:15	Environmental Applications of Poplars in Rural and Urban Areas
Ceulemans Reinhart , Horemans Joanna A. and Vanbeveren Stefan P.P.	15:45	Short-rotation crops reduce greenhouse gas emissions and contribute to climate change mitigation
	16:15	Coffee break 

Management

Bergante Sara, Alasia Franco, Alasia Omar, Allasia Errrico, Bertaina Fabiano, Giuseppe Nervo and Gianni Facciotto.	16:45	Performances of 22 poplar genotypes selected in Europe in three sites of Northern Italy.
Garnica P., Romero P., Crespo O. and Garnica J.	17:00	Growth patterns of several poplar clones for plywood production in Spain.
Birger Hjelm and Theo Verwijst.	17:15	Cumulative Merchantable Stem Volume Equations for Poplar (<i>Populus Spp.</i>) Plantations on Farmland in Sweden.

Thursday 1st

Oliveira Nerea, del Río Miren, Rodríguez-Soalleiro Roque, Pérez-Cruzado César, Cañellas Isabel and Sixto Hortensia.	8:30	Mixed short rotation plantation of <i>Populus alba</i> and <i>Robinia pseudoacacia</i> for biomass yield over the course of two rotations.
Marron Nicolas, Priault Pierrick, Gana Cécilia, Gérard Dominique and Epron Daniel.	8:45	Prevalence of interspecific competition in a mixed poplar / black locust plantation under adverse climate conditions.
Mclvor Ian and Desrochers Valérie.	9:00	Tree willow root growth in sediments varying in texture
Lutter Reimo, Tullus Arvo, Tullus Tea, Hepner Heiki and Tullus Hardi.	9:15	Management of hybrid aspen (<i>Populus tremula</i> L. × <i>P. tremuloides</i> Michx.) coppice in hemiboreal conditions: production and growth under different thinning methods.
Liesebach Mirko, Volker Schneck, Pecenka Ralf, Spikermann Hendrik, Hans Marten Paulsen.	9:30	Comparison of the biomass production from 3 three-year rotation cycles of 2 ProLoc sites.
Macalpine William J, Harflett Claudia, Beale Michael H and Ward Jane L.	9:45	Optimising harvest time point and plantation density to maximize the production of high value compounds from willows.
Meyer Matthias, Krabel Doris, Morgenstern Kristin, Leibing Christoph, Lacková Lucia, Koreň Ján, Obuch Juraj, Jornitz Frank, Heil Balint, Heilig David, Kovacs Gabor, Hesser Franziska, Ranacher Lea, Spinelli Raffaele, ŠeffEROVÁ StanOVÁ Viera, Lasák Rastislav, Weih Martin and Weber Norbert.	10:00	Applied-level research on early poplar root and shoot growth performance for the project Dendromass4Europe – Securing dendromass production with poplar plantations in European rural areas.
Weigand Marie, Morgenstern Kristin, Thevs Niels, Darr Dietrich, Flechtner Stephan, Krabel Doris and Meyer Matthias.	10:15	Investigating the taxonomic background of black or hybrid poplars (<i>Populus spp.</i>) sampled in the Republic of Kyrgyzstan.

10:30 Coffee break



New Bioeconomies

Beale Michael H, Ward Jane L and Hanley Steven.

11:00

The potential of SRC Salicaceae as dual purpose extractive and biomass crops.

Ward Jane L., Lomax Charlotte, Bellisai Alice, Harflett Claudia, Noletto-Dias Clarice, Corol Delia I., Tawfike Ahmed, Ruvo Gianluca, Macalpine William and Beale Michael H..

11:15

Harnessing chemical diversity in the UK National Willow Collection for sustainable high value and high volume products.

Ferrere Paula, Signorelli Alejandro, Clara Cobas Ana y Garau Ana.

11:30

Biomass in poplar plantations in the continental zone in the province of Buenos Aires: expanding forest services

Van Acker Joris, Defoidt Nele, Van den Bulcke Jan

11:45

Multipurpose use for both material and energy providing guidance on selection of poplar and willow clones using structural and chemical parameters.

12:15 Closing ceremony

Friday 2nd – Saturday 3st – Sunday 4th

Patagonia Field Trip.